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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/720,437	11/24/2003	Thomas Vogelsang	2002 P 12738 US	5122

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EXAMINER

STOYNOV, STEFAN

ART UNIT	PAPER NUMBER
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2116

DATE MAILED: 09/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/720,437	VOGELSANG, THOMAS	
	Examiner	Art Unit	
	Stefan Stoynov	2116	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 16-21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Election/Restrictions

Applicant's election of claims 1-15 in the reply filed on 06/28/2006 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claim 1-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Katsuhisa, US Patent No. 6,278,652 in view of Benno et al., US Patent Appl. Pub. No. 2003/0226054. Katsuhisa and Benno show all claim limitations in Figures 1-4 and 1-16, accordingly.

Regarding claim 1, Katsuhisa discloses a clock filter for an electronic device, the clock filter comprising:

a clock receiver 11 electrically coupled to an external clock CLK (column 1, lines 43-45, column 6, lines 6-10); and

an enabling circuit 4 electrically coupled to an external clock (column 6, lines 1-19);
wherein the clock receiver generates an internal clock signal (column 3, lines 9-15).

Katsuhisa fails to disclose the enabling circuit disables the clock receiver for a first time period after detecting a transition on the internal clock.

Benno teaches a clock filter similar to the current application (paragraph 0024, lines 1-3). Benno further teaches HOLDING CIRCUIT 203 and an exclusive-OR 205 (i.e. an enabling circuit), receiving both the internal clock and the control signal S21 for disabling the internal clock S12 transitioning for a predetermined period of time (paragraph 0073 – paragraph 0079, FIG. 3). Thus, both the internal clock transitions S12 and the signal indicative of noise S13 are detected and the receiver is stopped, accordingly. In Benno, the designer can change the period during which the internal clock signal is disabled with flexibility, thus preventing operation under unstable conditions due to external noise (paragraphs 0022 and 0035).

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to use the enable circuit and the process of disabling the internal clock, as suggested by Benno with the clock filter disclosed by Katsuhisa in order to implement the enabling circuit disables the clock receiver for a first time period after detecting a transition on the internal clock. One of ordinary skill in the art would be motivated to do so in order to prevent operation under unstable conditions due to external clock noise.

Regarding claim 2, Benno further teaches the clock filter, wherein the enabling circuit includes a pulse generator 203 (HOLDING CIRCUIT 203 outputs pulse – see FIG. 3, S21).

Regarding claim 3, Benno further teaches the clock filter as per claim 2, wherein the pulse generator is electrically coupled to the clock receiver (output S83 of HOLDING CIRCUIT 203 coupled through gate 303, FIG. 12), and the pulse generator generates a pulse signal S83 having a duration substantially equivalent to the first time period (S12 in FIG. 13 between T_{noise} and T_{n+2} , paragraphs 0142 and 0143).

Regarding claim 4, Benno further teaches the clock filter as per claim 3, wherein the clock receiver is disabled when the pulse signal is high (pulses S21, S32, and S83 in FIG(s) 3, 5, and 13, accordingly).

Regarding claim 5, Benno further teaches the clock filter, wherein the enabling circuit is electrically coupled to a clock filter enable signal (HOLDING CIRCUIT receiving signal S13, FIG(s) 2, 4, and 12).

Regarding claim 6, Benno further teaches the clock filter as per claim 5, wherein the enabling circuit disables the clock receiver when the clock filter enable signal is enabled (paragraph 0064).

Regarding claim 7, Katsuhisa discloses a clock filter for an electronic device, the clock filter comprising:

a clock receiver 11 electrically coupled to an external clock signal CLK, the clock receiver generating an internal clock signal (column 1, lines 43-45, column 6, lines 6-10);

Katsuhisa fails to disclose a pulse generator electrically coupled to the clock receiver, the pulse generator generating a pulse for a first period after detecting a transition in the

internal clock signal; and an enabling circuit coupled to the pulse generator and the clock receiver, the enabling circuit being electrically coupled to a clock filter enable signal and disabling the clock receiver when the clock filter enable signal is enabled during the first time period.

Benno teaches a clock filter similar to the current application (paragraph 0024, lines 1-3). Benno further teaches pulse generator (HOLDING CIRCUIT) electrically coupled to the clock receiver (via gates 205 or 303), the pulse generator generating a pulse (S21, S32, or S83) for a first period after detecting a transition in the internal clock signal (period S12 in FIG(s) 3 and 5 between T_{noise} and T_{n+1} and between T_{noise} and T_{n+2} in FIG. 13); and an enabling circuit coupled (gates 205 or 303) to the pulse generator and the clock receiver (FIG(s) 2, 4, and 12), the enabling circuit being electrically coupled to a clock filter enable signal (S13 electrically coupled to gates 205 or 303 through the HOLDING CIRCUIT 203) and disabling the clock receiver when the clock filter enable signal is enabled during the first time period (paragraph 0064). In Benno, the designer can change the period during which the internal clock signal is disabled with flexibility, thus preventing operation under unstable conditions due to external noise (paragraphs 0022 and 0035).

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to use the above-described circuit and process of disabling the receiver, as suggested by Benno with the clock filter disclosed by Katsuhisa in order to implement a pulse generator electrically coupled to the clock receiver, the pulse generator generating a pulse for a first period after detecting a transition in the internal clock signal; and an enabling circuit coupled to the pulse generator and the clock receiver, the enabling circuit being electrically

coupled to a clock filter enable signal and disabling the clock receiver when the clock filter enable signal is enabled during the first time period. One of ordinary skill in the art would be motivated to do so in order to prevent operation under unstable conditions due to external clock noise.

Regarding claim 8, Benno further teaches the clock filter, wherein the enabling circuit is electrically coupled to a clock enable signal S13, the enabling circuit disabling the clock receiver when the clock enable signal is reset (S13 is couple to the reset input R of latches 301, 302, and 801 in FIG(s) 4 and 12, paragraph 0091).

Regarding claim 9, Benno further teaches the clock filter, wherein the enabling circuit includes:

a NAND gate electrically coupled to the pulse generator and the clock filter enable signal; and

an AND gate electrically coupled to the NAND gate such that the output of the NAND gate is a first input to the AND gate

[Benno teaches logical gates (205 and 303) interconnected with the pulse generator and the clock filter enable signal (FIG(s) 2, 4, and 12). Although the gates and connection taught by Benno are not identical to the gates and interconnections, as indicated above, the achieved functionality is the same as in the claimed invention. Thus, Benno teaches obvious variations for implementing the same functionality by utilizing different logic gates].

Regarding claim 10, Benno further teaches the clock filter as per claim 9, wherein the AND gate has a second input electrically coupled to a clock enable signal.

Regarding claim 11, Benno further teaches the clock filter as per claim 9, wherein an output of the AND gate is electrically coupled to the clock receiver.

Regarding claim 12, Benno further teaches the clock filter, wherein the enabling circuit includes:

- a first NAND gate electrically coupled to the pulse generator and the clock filter enable signal;

- a second NAND gate electrically coupled to the output of the first NAND gate; and

- an inverter electrically coupled to the output of the second NAND gate, wherein the output of the inverter is electrically coupled to the clock receiver.

[Benno teaches logical gates (205 and 303) interconnected with the pulse generator and the clock filter enable signal (FIG(s) 2, 4, and 12). Although the gates and connection taught by Benno are not identical to the gates and interconnections, as indicated above, the achieved functionality is the same as in the claimed invention. Thus, Benno teaches obvious variations for implementing the same functionality by utilizing different logic gates].

Regarding claim 13, Benno further teaches the clock filter as per claim 12, wherein the second NAND gate has a second input electrically coupled to a clock enable signal.

Regarding claim 14, Katsuhisa and Benno further teach the clock filter as per claim 12, wherein the first NAND gate has a second input electrically coupled to a test mode enable signal (Katsuhisa, TEST MODE SIGNAL, FIG(s) 1 and 4).


Regarding claim 15, Benno further teaches the clock filter, wherein the first time period is about 5% to about 10% of a transition period of the external clock signal (paragraph 0035).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stefan Stoykov whose telephone number is (571) 272-4236. The examiner can normally be reached on 8:00AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynne Browne can be reached on (571) 272-3670. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SS


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